



STIC Search Report

EIC 1700

STIC Database Tracking Number: 116623

TO: Ling Xu
Location: REMSEN 5D60
Art Unit : 1775
March 17, 2004

Case Serial Number: 10/686663

From: Kathleen Fuller
Location: EIC 1700
REMSSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example: 1713

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Lim, Xu Examiner #: 7724 Date: 3/4/04
Art Unit: 1115 Phone Number 30 Serial Number: 10656-000
Mail Box and Bldg/Room Location: 5.060 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

See attached

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>R. Fuller</u>	NA Sequence (#) _____	STN <u>✓</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____
Date Completed: <u>3/17/04</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>99</u>	Other _____	Other (specify) _____

=> file reg

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Property values tagged with IC are from the ZIC/VINITI data file
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STRUCTURE FILE UPDATES: 16 MAR 2004 HIGHEST RN 663883-43-0
DICTIONARY FILE UPDATES: 16 MAR 2004 HIGHEST RN 663883-43-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> file hcaplus

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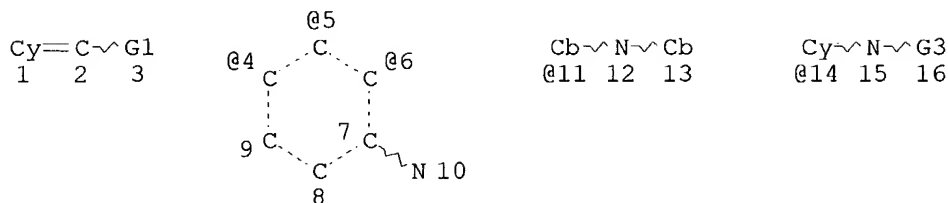
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FILE COVERS 1907 - 17 Mar 2004 VOL 140 ISS 12
FILE LAST UPDATED: 16 Mar 2004 (20040316/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d que

L1 STR



$\text{C}=\text{C}$
 @17 @18

$\text{C}=\text{C}\sim\text{G2}\sim\text{Cy}\sim\text{N}\sim\text{G3}$
 @19 20 21 22 23 24

VAR G1=6/5/4/11/14/19
 REP G2=(0-1) 17-20 18-22
 VAR G3=CY/AK
 NODE ATTRIBUTES:
 NSPEC IS R AT 10
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE
 L2 SCR 1839 AND 1992
 L3 SCR 1015 OR 1054
 L4 SCR 1609 OR 1607
 L5 SCR 1918 OR 2043 OR 2040
 L6 15822 SEA FILE=REGISTRY SSS FUL L1 AND L2 AND L3 AND L4 NOT L5
 L9 STR

$\text{G1}=\text{Cy}=\text{C}\sim\text{Cb}\sim\text{N}\sim\text{Cb}$
 6 1 2 3 4 5

VAR G1=O/S/C/N
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE
 L12 453 SEA FILE=REGISTRY SUB=L6 SSS FUL L9
 L13 101 SEA FILE=HCAPLUS ABB=ON L12
 L14 6 SEA FILE=HCAPLUS ABB=ON L13(L) (EL OR ?LUMINES? OR LIGHT?(2A)?E MIT?)
 L15 2 SEA FILE=HCAPLUS ABB=ON L13(L) FLUORESC?
 L16 7 SEA FILE=HCAPLUS ABB=ON L14 OR L15

=> d l16 all 1-7 hitstr

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

15,822 structures from this query which covers all claims

Subset search for formulas in claims 7 and 8

453 structures

7 CA references with utility

L16 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:157702 HCAPLUS
 DN 139:14803
 ED Entered STN: 03 Mar 2003
 TI Fluorescence quenching of the ketocyanine dyes in polar solvents:
 anti-TICT behavior
 AU Doroshenko, A. O.; Pivovarenko, V. G.
 CS Institute for Chemistry, Kharkov V.N. Karazin National University,
 Kharkov, 61077, Ukraine
 SO Journal of Photochemistry and Photobiology, A: Chemistry (2003), 156(1-3),
 55-64
 CODEN: JPPCEJ; ISSN: 1010-6030
 PB Elsevier Science B.V.
 DT Journal
 LA English
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 73
 AB Spectral properties and fluorescence decay in a series of differently
 N-substituted ketocyanine dyes belonging to the dibenzalcylopentanone
 type were studied in solvents of various polarity and hydrogen bonding
 ability. The significant solvent-induced fluorescence quenching was
 explained by the increase of internal conversion rate owing to the
 lowering of the energy gap between S1 and S0 states in polar solvents.
 The alternative model of non-luminescent TICT states formation was shown
 to be less probable in the discussed series.
 ST fluorescence quenching ketocyanine dye polar solvent
 IT Excited state
 (charge-transfer; solvent-induced fluorescence quenching of ketocyanine
 dyes in relation to to formation of twisted intramol. charge transfer
 state)
 IT Fluorescence decay
 Hydrogen bond
 Molecular structure-property relationship
 Singlet state transition
 Solvatochromism
 Solvent polarity effect
 (fluorescence of dibenzalcylopentanone-type ketocyanine dyes in
 solvents of various polarity and hydrogen bonding ability)
 IT Nonradiative transition
 (kinetics; fluorescence of dibenzalcylopentanone-type ketocyanine dyes
 in solvents of various polarity and hydrogen bonding ability)
 IT AM1 MO (molecular orbital)
 Bond angle
 (mol. geometry AM1 calcns. for ketocyanine dyes in relation to
 solvent-induce quenching of fluorescence of these dye)
 IT Molecular structure
 (of ketocyanine dyes in relation to solvent-induce quenching of
 fluorescence of these dye)
 IT Fluorescence quenching
 (solvent-induced; fluorescence of dibenzalcylopentanone-type
 ketocyanine dyes in solvents of various polarity and hydrogen bonding
 ability)
 IT 19226-99-4 122655-49-6 125594-50-5 129236-69-7 294191-74-5
 534590-95-9
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
 (Physical process); PROC (Process)
 (fluorescence of dibenzalcylopentanone-type ketocyanine dyes

in solvents of various polarity and hydrogen bonding ability)
 IT 64-17-5, Ethanol, properties 67-56-1, Methanol, properties 67-63-0,
 Isopropanol, properties 68-12-2, DMF, properties 75-05-8,
 Acetonitrile, properties 108-88-3, Toluene, properties 123-86-4, Butyl
 acetate 123-91-1, Dioxane, properties
 RL: PRP (Properties)

(solvent effect; fluorescence of dibenzalcylopentanone-type
 ketocyanine dyes in solvents of various polarity and hydrogen bonding
 ability)

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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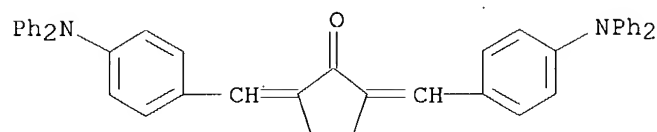
IT 122655-49-6

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
 (Physical process); PROC (Process)

(fluorescence of dibenzalcylopentanone-type ketocyanine dyes
 in solvents of various polarity and hydrogen bonding ability)

RN 122655-49-6 HCAPLUS

CN Cyclopentanone, 2,5-bis[[4-(diphenylamino)phenyl]methylene]- (9CI) (CA
 INDEX NAME)



L16 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:932596 HCAPLUS

DN 136:61299

ED Entered STN: 27 Dec 2001

TI Electroluminescent device using styrylamines

IN Arai, Kazumi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 33 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09K011-06

ICS C09K011-06; C07C225-22; C07D209-88; C07D333-36; C07D401-12;
C07D409-12; C07D413-12; C07D417-12; C07D471-04; H05B033-14

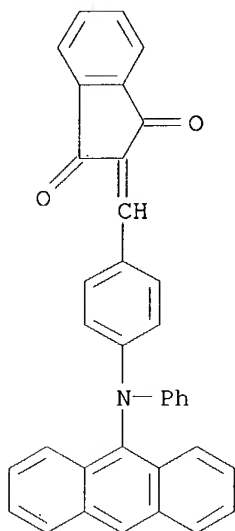
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74

FAN.CNT 1

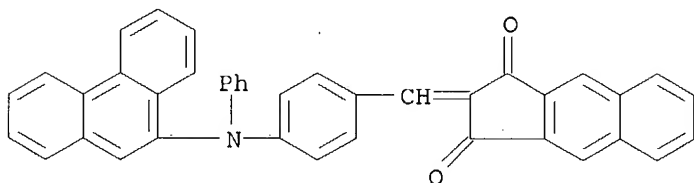
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001354955	A2	20011225	JP 2000-177761	20000614
PRAI	JP 2000-177761		20000614		
OS	MARPAT 136:61299				
AB	The invention relates to a red-emitting electroluminescent device comprising R1R2R3N [R1-3 = (un)substituted aryl, heterocyclyl, aliphatic hydrocarbyl; ≥2 of R1-3 is aryl or heterocyclyl; ≥1 of R1-3 is aryl or heterocyclyl formed by ≥3 rings; ≥2 of R1-3 may form a ring; ≥1 R1-3 is substituted by a group (5 - 7 membered ring):C(R4)(CR5:CR6)m- (R4-6 = H, substituent; m = 0, 1 or 2)]. The red luminous component offers superior in color purity.				
ST	styrylamine red emitting electroluminescent device				
IT	Electroluminescent devices Luminescence (of red light-emitting component using chemical compds. and styrylamines)				
IT	382601-08-3P 382601-09-4P 382601-10-7P 382601-11-8P 382601-12-9P 382601-13-0P RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (electroluminescent devices using styrylamines)				
IT	852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 25067-59-8, Poly(N-vinylcarbazole) 65181-78-4, TPD 313950-73-1 RL: DEV (Device component use); USES (Uses) (electroluminescent devices using styrylamines and)				
IT	382601-08-3P 382601-09-4P 382601-10-7P 382601-11-8P 382601-12-9P 382601-13-0P RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (electroluminescent devices using styrylamines)				
RN	382601-08-3 HCAPLUS				

CN 1H-Indene-1,3(2H)-dione, 2-[[4-(9-anthracenylphenylamino)phenyl]methylene]-
(9CI) (CA INDEX NAME)



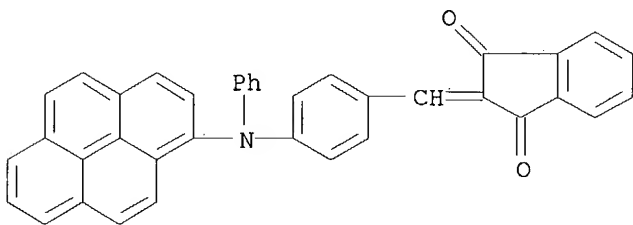
RN 382601-09-4 HCAPLUS

CN 1H-Benz[f]indene-1,3(2H)-dione, 2-[[4-(9-phenanthrenylphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



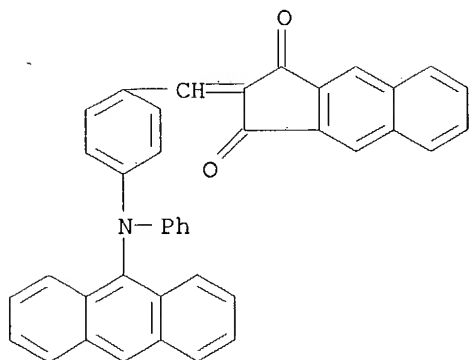
RN 382601-10-7 HCAPLUS

CN 1H-Indene-1,3(2H)-dione, 2-[[4-(phenyl-1-pyrenylamino)phenyl]methylene]-
(9CI) (CA INDEX NAME)

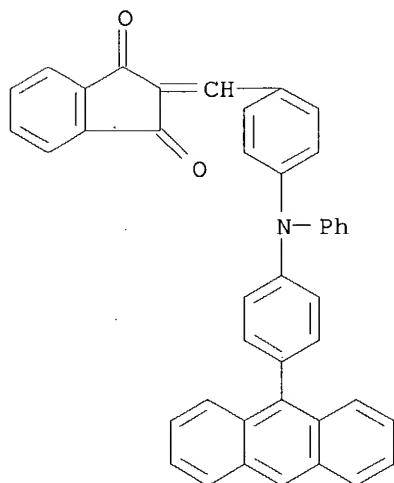


RN 382601-11-8 HCAPLUS

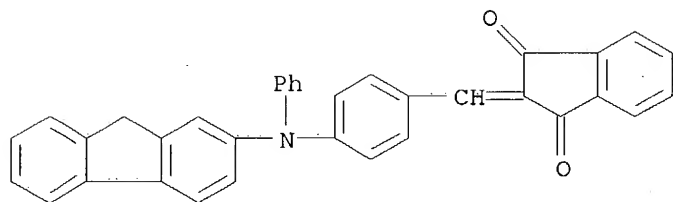
CN 1H-Benz[f]indene-1,3(2H)-dione, 2-[[4-(9-anthracenylphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



RN 382601-12-9 HCAPLUS
 CN 1H-Indene-1,3(2H)-dione, 2-[[4-[[4-(9-anthracenyl)phenyl]phenylamino]phenyl]methylene]- (9CI) (CA INDEX NAME)



RN 382601-13-0 HCAPLUS
 CN 1H-Indene-1,3(2H)-dione, 2-[[4-(9H-fluoren-2-ylphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



L16 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:269430 HCAPLUS
 DN 134:287647

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

ED Entered STN: 17 Apr 2001
 TI Luminescent material, luminescent component and amine compound
 IN Arai, Kazumi
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 37 pp. *App.*
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C09K011-06
 ICS C09K011-06; C07C225-22; C07D223-26; C07D231-22; C07D239-60;
 C07D309-34; C07D311-58; C07D333-60; C07D333-64; C07D405-14;
 C07D409-14; C07D413-14; C07D417-14; H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001107037	A2	20010417	JP 1999-347784	19991207
PRAI	JP 1999-66923	A	19990312		
	JP 1999-209820	A	19990723		
	JP 1999-222520	A	19990805		

OS MARPAT 134:287647

AB The invention refers to a luminescent component, suitable for use in display devices, containing an amine NR₁R₂R₃ {R₁-3 = aryl, heterocyclic, or aliphatic hydrocarbon, where at least two of the three are aryl or heterocyclic, and may be joined to form 5 - 7 membered rings, and at least two are Z₁:C(R₄)-(R₅C:CR₆)_m- [R₄-6 = H, or functional group; Z₁ = 5 - 7 membered ring; m = 0, 1, or 2]}.

ST electroluminescent device amine

IT Electroluminescent devices

(luminescent material, luminescent component and amine compound)

IT 852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole
 1450-63-1, 1,1,4,4-Tetraphenyl butadiene 2085-33-8, Aluminum
 tris(8-hydroxy quinolinato) 25067-59-8, Poly(N-vinyl carbazole)
 65181-78-4, TPD 123847-85-8 **333384-03-5 333384-04-6**

RL: DEV (Device component use); USES (Uses)

(luminescent material, luminescent component and amine compound)

IT **333384-03-5 333384-04-6**

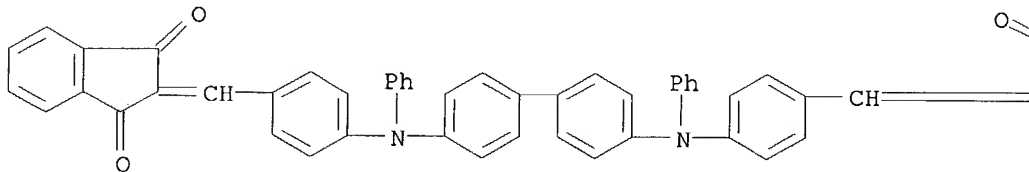
RL: DEV (Device component use); USES (Uses)

(luminescent material, luminescent component and amine compound)

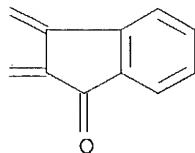
RN 333384-03-5 HCAPLUS

CN 1H-Indene-1,3(2H)-dione, 2,2'-[[1,1'-biphenyl]-4,4'-diylbis[(phenylimino)-4,1-phenylenemethylidyne]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

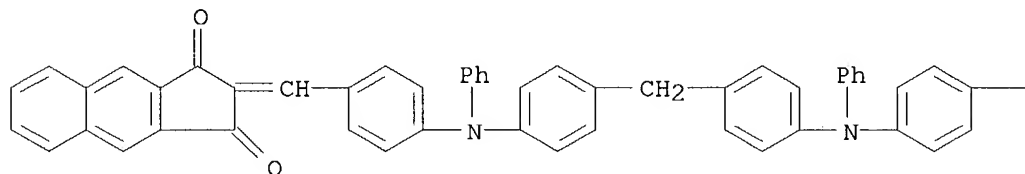


PAGE 1-B

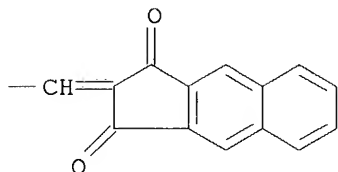


RN 333384-04-6 HCAPLUS
CN 1H-Benz[f]indene-1,3(2H)-dione, 2,2'-[methylenebis[4,1-phenylene(phenylimino)-4,1-phenylenemethyldyne]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



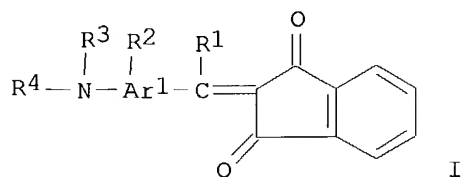
PAGE 1-B



L16 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:89729 HCAPLUS
DN 134:139033
ED Entered STN: 07 Feb 2001
TI A novel methine compound, luminescent material and component
IN Yanagi, Terukazu; Arai, Kazumi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K011-06
ICS C09K011-06; C07C225-22; C07D209-86; C07D215-14; C07D223-22;
C07D241-46; C07D265-38; C07D279-22; C07D333-36; C09B023-00;
H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2001031961 A2 20010206 JP 1999-204860 19990719
 PRAI JP 1999-204860 19990719
 OS MARPAT 134:139033
 GI



AB The invention refers to a novel methine compound, suitable for use as a luminescent material, I [R1,3,4 = H, or other substituent; R2 = substituents, if more than one R2 is present, they may join together to form a ring; Ar1 = trivalent or multivalent aryl; and R1,2, R2,3, and R3,4 may join together to form rings.].

ST methine phosphor electroluminescent device

IT Electroluminescent devices
 Phosphors

(a novel methine compound, luminescent material and component)

IT 905-62-4 1450-63-1, 1,1,4,4-Tetraphenyl butadiene 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 15082-28-7, 2-(4-Biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole 25067-59-8, Poly(N-vinylcarbazole) 37271-44-6 50926-11-9, ITO 51325-91-8, DCM 65181-78-4, TPD 322471-19-2 322471-22-7 322471-23-8 322471-24-9

RL: DEV (Device component use); USES (Uses)

(a novel methine compound, **luminescent** material and component)

IT 110730-90-0P 322471-20-5P 322471-21-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(a novel methine compound, **luminescent** material and component)

IT 606-23-5, 1,3-Indandione 42481-49-2 42906-19-4 89115-20-8 89115-21-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(a novel methine compound, luminescent material and component)

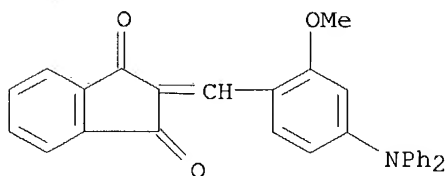
IT 322471-19-2 322471-22-7 322471-24-9

RL: DEV (Device component use); USES (Uses)

(a novel methine compound, **luminescent** material and component)

RN 322471-19-2 HCAPLUS

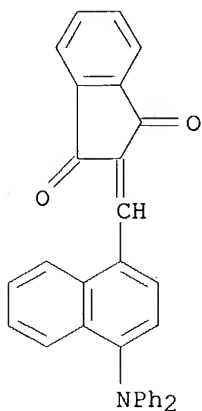
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)-2-methoxyphenyl]methylene]-(9CI) (CA INDEX NAME)



RN 322471-22-7 HCAPLUS

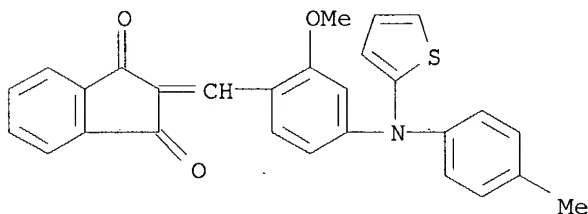
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)-1-naphthalenyl]methylene]-

(9CI) (CA INDEX NAME)



RN 322471-24-9 HCAPLUS

CN 1H-Indene-1,3(2H)-dione, 2-[[2-methoxy-4-[(4-methylphenyl)-2-thienylamino]phenyl]methylene]- (9CI) (CA INDEX NAME)

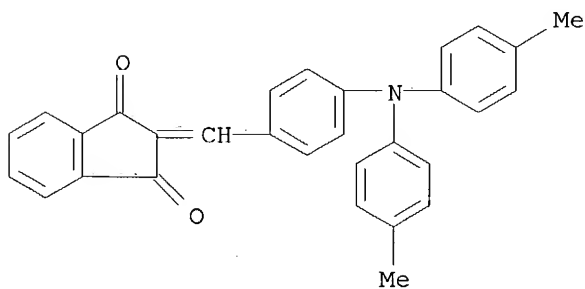


IT 110730-90-0P 322471-20-5P 322471-21-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(a novel methine compound, **luminescent** material and component)

RN 110730-90-0 HCAPLUS

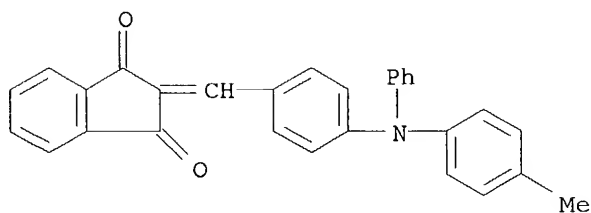
CN 1H-Indene-1,3(2H)-dione, 2-[[4-[(4-methylphenyl)phenylamino]phenyl]methylene]- (9CI) (CA INDEX NAME)



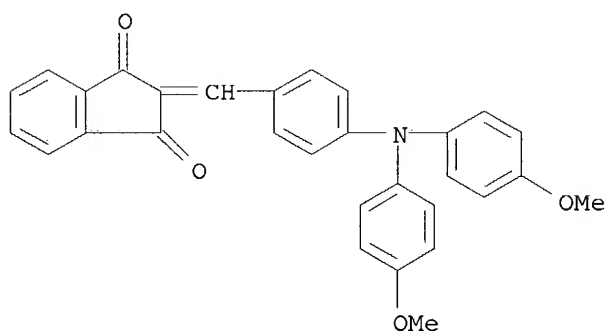
RN 322471-20-5 HCAPLUS

CN 1H-Indene-1,3(2H)-dione, 2-[[4-[(4-methylphenyl)phenylamino]phenyl]methyle

ne]- (9CI) (CA INDEX NAME)



RN 322471-21-6 HCAPLUS
 CN 1H-Indene-1,3(2H)-dione, 2-[[4-[bis(4-methoxyphenyl)amino]phenyl]methylene]- (9CI) (CA INDEX NAME)



L16 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:748825 HCAPLUS
 DN 133:303297
 ED Entered STN: 24 Oct 2000
 TI Organic electroluminescent material, device therewith, and triarylamine compound as fluorescent dye
 IN Arai, Kazumi; Yanagi, Terukazu
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 34 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07C225-22
 ICS C07D209-86; C07D239-60; C07D277-28; C07D277-30; C07D277-34; C07D277-36; C07D333-36; C07D333-60; C07D333-64; C07D409-10; C07D409-12; C07D417-10; C09K011-06; H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25, 41

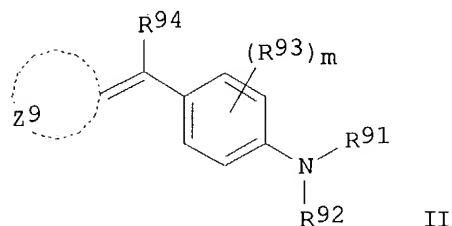
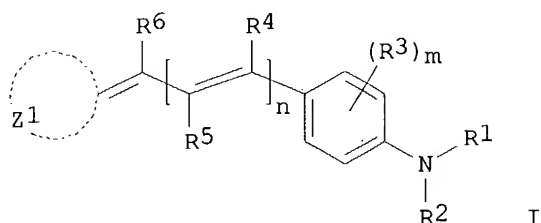
applicant's

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000297068	A2	20001024	JP 1999-237266	19990824
	US 6689491	B1	20040210	US 2000-499460	20000207
PRAI	JP 1999-30190	A	19990208		

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

JP 1999-66923 A 19990312
 JP 1999-209820 A 19990723
 JP 1999-237266 A 19990824
 OS MARPAT 133:303297
 GI



AB The material is represented by I [R1, R2 = aryl, heterocycle, alicyclic group (R1 and/or R2 = aryl or heterocycle); R3 = substituents; m = 0-4; R4-6 = H, substituents; Z1 = 5-7-membered ring; n = 0-2]. The triarylamine compound is styrylamine derivative II (R91, R92 = aryl, heterocycle; R93 = substituents; R94 = H, alkyl, alkenyl, acyl, sulfonyl, alkoxy carbonyl, carbonamido, cyano; Z9 = substituted 1,3-indandione, furanone, oxindole, etc.). The electroluminescent device, showing high-luminance display without dark spots, has a (polymer) layer dispersing the above compound

ST electroluminescent device arylamine dark spot prevention; styrylamine fluorescent dye electroluminescent device; indanone nuclei styrylamine electroluminescent dye

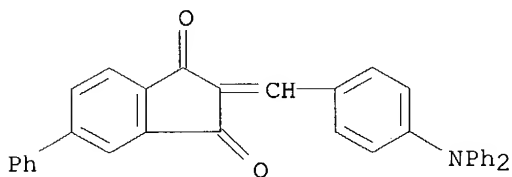
IT Amines, uses
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (aromatic, fluorescent dye; organic electroluminescent device including styrylamine derivative and showing high-luminance display)

IT Electroluminescent devices
 Fluorescent dyes
 (organic electroluminescent device including styrylamine derivative and showing high-luminance display)

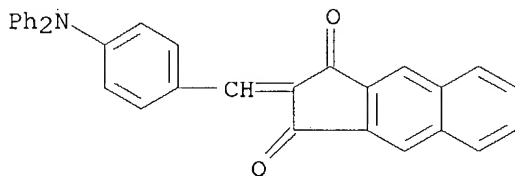
IT 25067-59-8, Poly(N-vinylcarbazole)
 RL: DEV (Device component use); USES (Uses)
 (emission layer; organic electroluminescent device including styrylamine derivative and showing high-luminance display)

IT 5694-20-2DP, Styrylamine, derivative **301301-22-4P**
301301-23-5P 301301-24-6P 301301-25-7P
 301301-26-8P
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

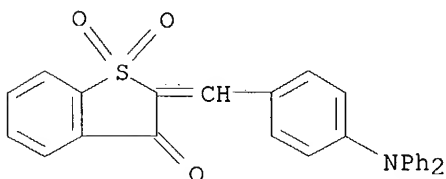
(fluorescent dye; organic electroluminescent device including styrylamine derivative and showing high-luminance display)
 IT 4181-05-9, 4-(N,N-Diphenylamino)benzaldehyde 50919-76-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in preparation of styrylamine derivative for fluorescent dye in electroluminescent device)
 IT 301301-22-4P 301301-23-5P 301301-24-6P 301301-25-7P
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (fluorescent dye; organic electroluminescent device including styrylamine derivative and showing high-luminance display)
 RN 301301-22-4 HCAPLUS
 CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)phenyl]methylene]-5-phenyl- (9CI) (CA INDEX NAME)



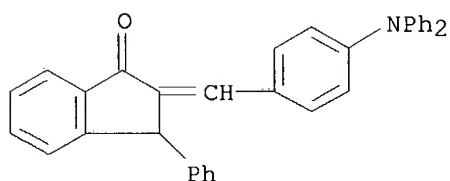
RN 301301-23-5 HCAPLUS
 CN 1H-Benz[f]indene-1,3(2H)-dione, 2-[[4-(diphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



RN 301301-24-6 HCAPLUS
 CN Benzo[b]thiophen-3(2H)-one, 2-[[4-(diphenylamino)phenyl]methylene]-, 1,1-dioxide (9CI) (CA INDEX NAME)



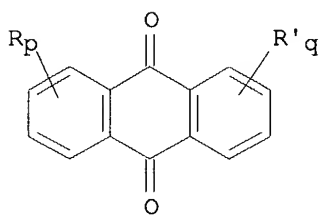
RN 301301-25-7 HCAPLUS
 CN 1H-Inden-1-one, 2-[[4-(diphenylamino)phenyl]methylene]-2,3-dihydro-3-phenyl- (9CI) (CA INDEX NAME)



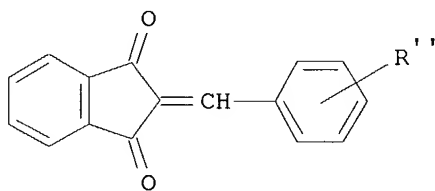
L16 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1996:434790 HCAPLUS
 DN 125:99699
 ED Entered STN: 23 Jul 1996
 TI Electroluminescent device containing anthraquinone derivative or
 indandione derivative
 IN Murakami, Mutsuaki; Fukuyama, Masao; Suzuki, Mutsumi; Hashimoto, Mitsuru
 PA Matsushita Electric Ind Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM H01L033-00
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 76

FAN.CNT 1

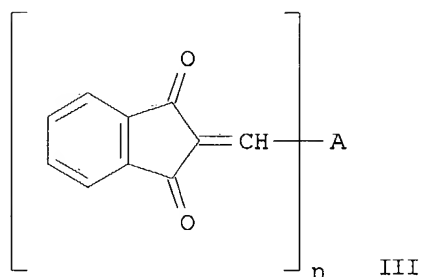
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08097465	A2	19960412	JP 1994-233832	19940928
PRAI	JP 1994-233832		19940928		
OS	MARPAT 125:99699				
GI					



I



II



III

AB The device contains an anthraquinone derivative I (R, R' = alkyl, alkoxy carbonyl, halo, NO₂, CN; p, q = 1-4) or an indandione derivative II or

III (R" = alkyl, alkoxy, alkylamino, arylamino, NO₂, CN, CF₃, F, Cl, CO, butylcarbonyl, Ph; A = aryl, arylene; n = 1-2).

ST electroluminescent device anthraquinone electron transporting; indandione electron transporting EL device

IT Electroluminescent devices
(electroluminescent device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

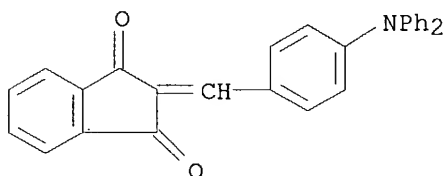
IT 84-47-9P 5381-33-9P 7421-76-3P 15875-51-1P 15875-54-4P
15875-55-5P 15875-56-6P 15875-60-2P 16210-62-1P 16210-64-3P
18913-75-2P 19371-91-6P 25364-82-3P 31316-87-7P 32358-72-8P
32358-73-9P 32712-59-7P 34200-53-8P 34200-56-1P 61499-33-0P
61499-34-1P **85299-18-9P** 95219-75-3P 136758-25-3P
143413-01-8P 171972-36-4P 178697-87-5P 178697-88-6P 178697-89-7P
178697-90-0P 178697-91-1P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(electron-transporting agent; **electroluminescent** device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

IT 2085-33-8
RL: DEV (Device component use); USES (Uses)
(light-emitting material; electroluminescent device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

IT **85299-18-9P**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(electron-transporting agent; **electroluminescent** device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

RN 85299-18-9 HCAPLUS

CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)phenyl]methylene]- (9CI)
(CA INDEX NAME)



L16 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:458371 HCAPLUS

DN 117:58371

ED Entered STN: 08 Aug 1992

TI Organic electroluminescent element

IN Ota, Masabumi; Onuma, Teruyuki; Kawamura, Fumio; Sakon, Hirota; Takahashi, Toshihiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DT Patent

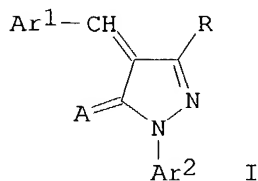
LA Japanese

IC ICM C09K011-06
ICS H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03163189	A2	19910715	JP 1990-191517	19900718
PRAI	JP 1989-219692		19890825		
OS	MARPAT 117:58371				
GI					



AB The title element, suited for use in large area displays, comprises ≥ 1 organic compound thin-film layer sandwiched between a cathode and an anode layer, wherein ≥ 1 of the organic compound layers) contains I {R = (un)substituted alkyl, hydroxy carbonyl, alkyloxy carbonyl, (un)substituted carbamoyl, (un)substituted carbocyclic or heterocyclic aromatic ring; A = O, Ar3-N; Ar1-3 = (un)substituted carbocyclic or heterocyclic aromatic ring}. The element is fabricated readily by VPE, providing a durable, high-luminescence, variable color-emitting device.

ST electroluminescence org variable color device

IT Electroluminescent devices

(variable visible color-emitting)

IT 15082-28-7 26895-92-1 55034-79-2 79926-38-8 79926-41-3
 80165-63-5 138996-98-2 138996-99-3 138997-00-9 138997-01-0
 138997-02-1 138997-03-2 138997-04-3
 138997-05-4 138997-06-5 138997-07-6 138997-08-7
 138997-09-8 138997-10-1 139023-36-2

RL: DEV (Device component use); USES (Uses)

(electroluminescent device from, as light emitter and/or electron or hole transporter)

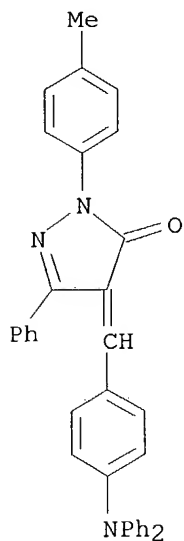
IT 138996-98-2 138997-02-1 138997-03-2
 138997-05-4

RL: DEV (Device component use); USES (Uses)

(electroluminescent device from, as light emitter and/or electron or hole transporter)

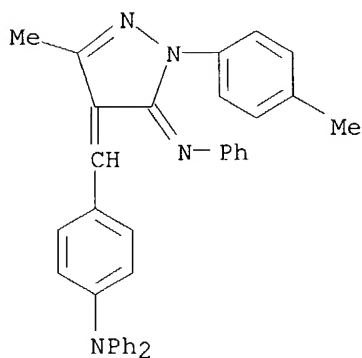
RN 138996-98-2 HCAPLUS

CN 3H-Pyrazol-3-one, 4-[[4-(diphenylamino)phenyl]methylene]-2,4-dihydro-2-(4-methylphenyl)-5-phenyl- (9CI) (CA INDEX NAME)



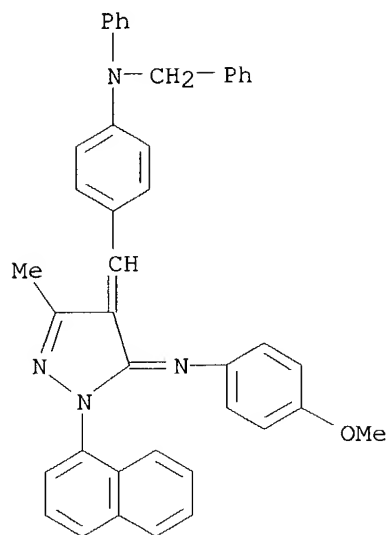
RN 138997-02-1 HCAPLUS

CN Benzenamine, 4-[[1,5-dihydro-3-methyl-1-(4-methylphenyl)-5-(phenylimino)-4H-pyrazol-4-ylidene]methyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)



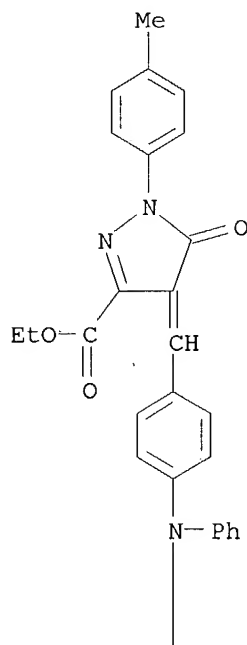
RN 138997-03-2 HCAPLUS

CN Benzenemethanamine, N-[4-[[1,5-dihydro-5-[(4-methoxyphenyl)imino]-3-methyl-1-(1-naphthalenyl)-4H-pyrazol-4-ylidene]methyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

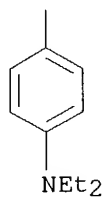


RN 138997-05-4 HCAPLUS
 CN 1H-Pyrazole-3-carboxylic acid, 4-[[[4-[[4-(diethylamino)phenyl]phenylamino]
 phenyl]methylene]-4,5-dihydro-1-(4-methylphenyl)-5-oxo-, ethyl ester (9CI)
 (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



=>

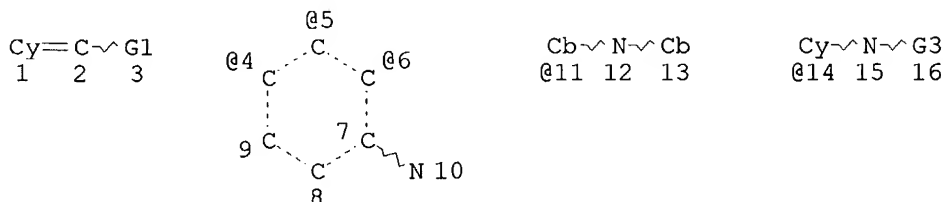
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=> s 141

L42 2 L41

=> d que

L25 STR



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$\text{C}=\text{C}\sim\text{G2}\sim\text{Cy}\sim\text{N}\sim\text{G3}$
 @19 20 21 22 23 24

VAR G1=6/5/4/11/14/19

REP G2=(0-1) 17-20 18-22

VAR G3=CY/AK

NODE ATTRIBUTES:

NSPEC IS R AT 10

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L26 SCR 1839 AND 1992

L27 SCR 1015 OR 1054

L28 SCR 1609 OR 1607

L29 SCR 1918 OR 2043 OR 2040

L30 15822 SEA FILE=REGISTRY SSS FUL L25 AND L26 AND L27 AND L28 NOT L29

L39 STR

$\text{G1}\equiv\text{Cy}=\text{C}\sim\text{Cb}\sim\text{N}\sim\text{Cb}$
 6 1 2 3 4 5

$\text{G1}\equiv\text{Cy}=\text{C}\sim\text{Cb}\sim\text{N}\sim\text{Cb}$
 12 7 8 9 10 11

VAR G1=O/S/C/N

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L41 4 SEA FILE=REGISTRY SUB=L30 SSS FUL L39

L42 2 SEA FILE=HCAPLUS ABB=ON L41

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

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L42 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:269430 HCAPLUS
 DN 134:287647
 ED Entered STN: 17 Apr 2001
 TI Luminescent material, luminescent component and amine compound
 IN Arai, Kazumi
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 37 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C09K011-06
 ICS C09K011-06; C07C225-22; C07D223-26; C07D231-22; C07D239-60;
 C07D309-34; C07D311-58; C07D333-60; C07D333-64; C07D405-14;
 C07D409-14; C07D413-14; C07D417-14; H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2001107037	A2	20010417	JP 1999-347784	19991207
PRAI	JP 1999-66923	A	19990312		
	JP 1999-209820	A	19990723		
	JP 1999-222520	A	19990805		

OS MARPAT 134:287647

AB The invention refers to a luminescent component, suitable for use in display devices, containing an amine NR₁R₂R₃ {R₁-3 = aryl, heterocyclic, or aliphatic hydrocarbon, where at least two of the three are aryl or heterocyclic, and may be joined to form 5 - 7 membered rings, and at least two are Z₁:C(R₄)-(R₅:C(R₆))m- [R₄-6 = H, or functional group; Z₁ = 5 - 7 membered ring; m = 0, 1, or 2]}.

ST electroluminescent device amine

IT Electroluminescent devices

(luminescent material, luminescent component and amine compound)

IT 852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole
 1450-63-1, 1,1,4,4-Tetraphenyl butadiene 2085-33-8, Aluminum
 tris(8-hydroxy quinolinato) 25067-59-8, Poly(N-vinyl carbazole)
 65181-78-4, TPD 123847-85-8 **333384-03-5 333384-04-6**

RL: DEV (Device component use); USES (Uses)

(luminescent material, luminescent component and amine compound)

IT **333384-03-5 333384-04-6**

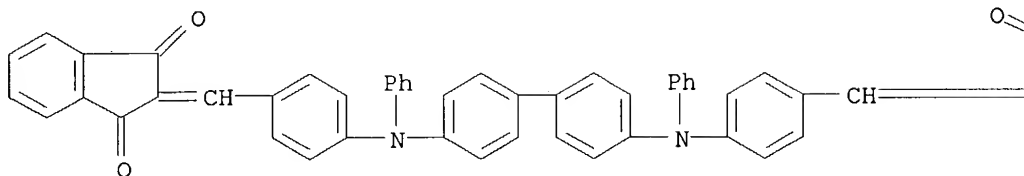
RL: DEV (Device component use); USES (Uses)

(luminescent material, luminescent component and amine compound)

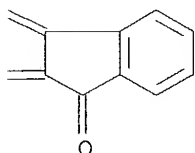
RN 333384-03-5 HCAPLUS

CN 1H-Indene-1,3(2H)-dione, 2,2'-[[1,1'-biphenyl]-4,4'-diylbis[(phenylimino)-
 4,1-phenylenemethylidyne]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

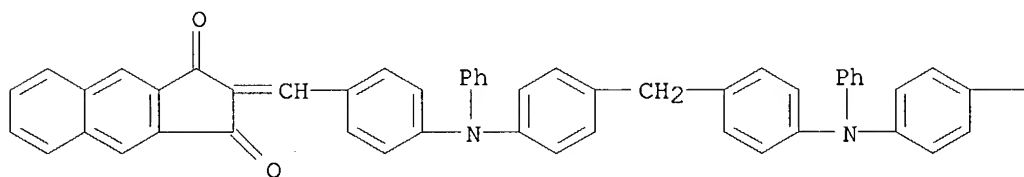


PAGE 1-B

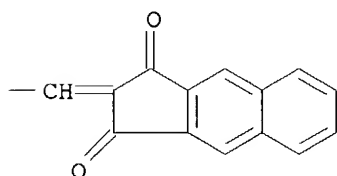


RN 333384-04-6 HCAPLUS
CN 1H-Benz[f]indene-1,3(2H)-dione, 2,2'-[methylenebis[4,1-phenylene(phenylimino)-4,1-phenylenemethylidene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

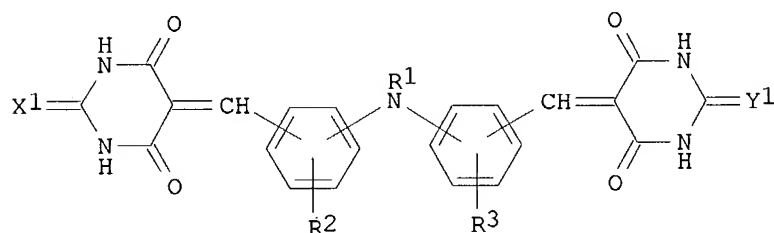


L42 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:735456 HCAPLUS
DN 123:127548
ED Entered STN: 15 Aug 1995
TI Electrophotographic photoreceptor having high sensitivity and low photomemory
IN Tanaka, Masato; Kashizaki, Yoshiro; Senoo, Akihiro
PA Canon Kk, Japan

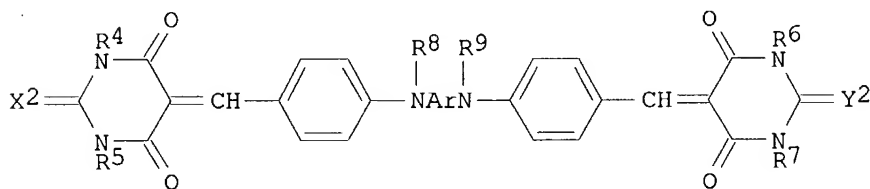
SO Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07120947	A2	19950512	JP 1993-286178	19931022
	JP 3145846	B2	20010312		
PRAI	JP 1993-286178		19931022		
OS	MARPAT 123:127548				
GI					



I



II

AB In the electrophotog. photoreceptor having a photosensitive layer on a conductive support, the photosensitive layer contains I (X1, Y1 = O, S; R1 = H, alkyl, acyl; R2,3 = H, halo, nitro, cyano) or II (R4-9 = H, alkyl, acyl, aralkyl, Ph; Ar = aromatic, heterocycllyl).

ST barbiturate photosensitive layer electrophotog photoreceptor;
 thiobarbiturate photosensitive layer electrophotog photoreceptor;
 hydrazone photosensitive layer electrophotog photoreceptor

IT Electrophotographic photoconductors and photoreceptors
 (photosensitive layers)

IT Hydrazones
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (photosensitive layers of electrophotog. photoreceptors)

IT 166307-55-7P **166307-57-9P**
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (photosensitive layer of electrophotog. photoreceptor)

IT 85171-94-4 119344-14-8 132571-92-7 134957-46-3 166307-56-8

166307-58-0 166307-59-1 **166307-60-4** 166307-61-5

166307-62-6

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(photosensitive layer of electrophotog. photoreceptor)

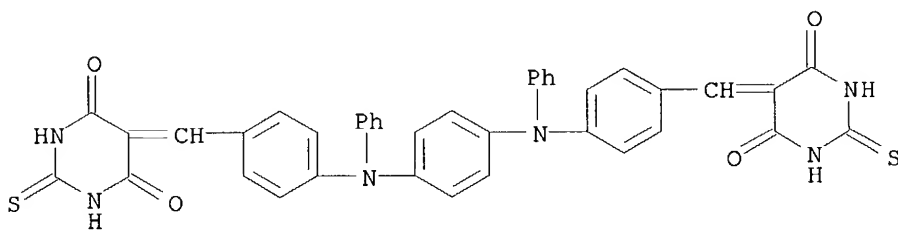
IT **166307-57-9P**

RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(photosensitive layer of electrophotog. photoreceptor)

RN 166307-57-9 HCAPLUS

CN 4,6(1H,5H)-Pyrimidinedione, 5,5'-[1,4-phenylenebis[(phenylimino)-4,1-phenylenemethylidene]]bis[dihydro-2-thioxo- (9CI) (CA INDEX NAME)

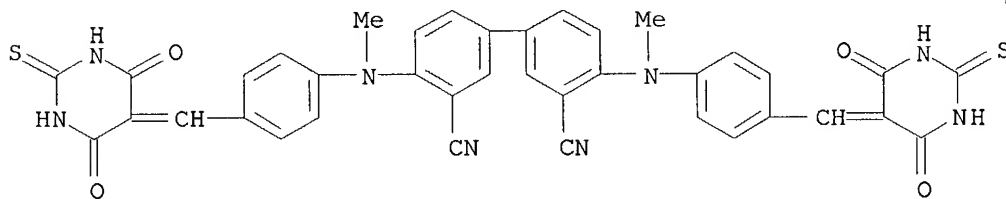
IT **166307-60-4**

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(photosensitive layer of electrophotog. photoreceptor)

RN 166307-60-4 HCAPLUS

CN [1,1'-Biphenyl]-3,3'-dicarbonitrile, 4,4'-bis[methyl[4-[(tetrahydro-4,6-dioxo-2-thioxo-5(2H)-pyrimidinylidene)methyl]phenyl]amino]- (9CI) (CA INDEX NAME)



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